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Irving N. Weinberg

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PATENT ADMINISTRATOR

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EXAMINER

BITAR, NANCY

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/663,706	Applicant(s) WEINBERG, IRVING N.	
	Examiner Nancy Bitar	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments, in the amendment filed 03/23/2007, with respect to the rejections of claims 1-30 under 35 U.S.C. 102 have been fully considered but are moot in view of the new ground(s) of rejection necessitated by the amendments. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Wainer et al (US 5,871,013) and Schneider et al (US 6,351,573).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wainer et al (5,871,013) in view of Schneider et al (6,351,573).

As to claim 1, Wainer et al teaches the system a system for determining a biopsy location in a body part, the system comprising:

a first device configured to obtain first data about a physiology of the body part, the first data being representable as a digital image (detector 22 is preferably an anger type camera, figure 6, column 8, lines 60-68, SPTCT image);

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a monitor coupled to the second device and configured to display the image corresponding to the second data (display 29, figure 6);

a memory coupled to the frame grabber and to the first device, the memory being configured to store the first data and the digitized second data (memory 28, figure 6);

and a computer coupled to the memory (image is calculated and displayed automatically by the computer, column 7, lines 47-49) and configured to correlate the first data with the digitized second data and to provide a result of the correlation to a user (correlating the two images, column 7, lines 10-25; the correlation algorithm used for matching images and slices, column 7, lines 50-67 and column 8, lines 1-31).

While Wainer meets a number of the limitations of the claimed invention, as pointed out more fully above, Wainer et al., teaches a radiation source, figure 6, STET image; note that figure 2B are STET images of the region shown in figure 1 and shows functionality active area 2 in image 6, but figure 2A shows a very simplified SPTCT image which is structural image, column 7, lines 15-24), but fails to specifically teach the frame grabber coupled to the second device, the frame grabber being configured to capture the second data from the second device without a need to substantially modify any underlying hardware or software processes in the second device, and the frame grabber includes an analog to-digital converter configured to digitize the second data. Specifically, Schneider et al. teaches obtaining a lead image of the object in real time via the second imaging modality along a lead-view; comparing the real time lead image to lead images in the lead image library via digital image analysis to identify a follow

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image line of view corresponding to the real time lead view wherein the use of the frame grabber is to capture each real time lead video image and analyzed to identify predetermines fiducially markers (see figure 2). Because the frame grabber with the ADC gives a three dimensional appearance and improve the effectiveness by giving appropriate depth cues to a surgeon wherein the frame grabber systems work by taking the analog monitor output from a digital modality and running it through an analog-to-digital converter which in itself degrades the data. It would have been obvious to one of ordinary skill in the art to use the frame grabber in Wainer in order to perform a wide variety of image processing functions including the automatic reading of stereotactic frame fiducial markers, three-dimensional reconstructions from two-dimensional data, and image transformations (scaling, rotating, translating). Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claim 2, Wainer et al teaches the system of claim 1, wherein the computer is further configured to use the result of the correlation to produce a combined image (figure 4B shows the super positioning of the outline of the active area from the STET image 6 on the CT image 70, column 7, lines 32-41).

As to claim 3, Wainer et al teaches the system of claim 2, wherein a determination of a biopsy location is made on the basis of the combined image (processor 26 determines the location and energy of photons striking detectors 22, column 9, lines 1-3).

As to claim 4, Wainer et al teaches the system of claim 1, further comprising a localization device coupled to the second device, the localization device being configured to enable a selection of a preferred subset of the second data based on the digital image corresponding to the first data (position sensor, column 9, lines 7-20, note that the images are transformed into multisliced image).

As to claim 5, Wainer et al teaches the system of claim 1, wherein the localization device comprises a computer mouse (note that STET image is under control through the computer therefore it is clear that the location can be pointed by a computer mouse, column 9, lines 20-23).

As to claim 6, Wainer et al teaches the system of claim 1, wherein the system is configured to use a predetermined spatial coordinate system, and wherein the computer includes a transformer configured to transform at least one of the first data and the digitized second data into the predetermined spatial coordinate system (spatial parameters matching, column 8, lines 9-16).

As to claim 7, Wainer et al teaches the system of claim 1, wherein the second device comprises one of the group consisting of a digital x-ray machine, an x-ray mammography machine, an x-ray cranial axial tomography machine, a magnetic resonance imaging machine, and an ultrasound machine (a method of registering a STET and a structural diagnostic image (such as MRI, ultrasound or X-ray CT image, column 2, lines 39-43).

As to claim 8, Wainer et al teaches the system of claim 1, wherein the first device comprises a positron emission tomography scanner machine (a SPTCT is a single photon transmission computerized tomography, column 1, lines 38-40).

Claims 9-17 differ from claim 1-8 only in that claims 9-17 are a method claim whereas, claims 1-8 are a system claim. Thus, claims 9-17 are analyzed as previously discussed with respect to claims 1-8 above.

Claims 18-20 differs from claim 9-17 only in that claim 9-17 are a method claim whereas; claims 18-20 are an apparatus claim. Thus, claims 18-20 are analyzed as previously discussed with respect to claims 9-17 above.

As to claim 21 refer to claim 1 above.

The limitation of claim 22, has been addressed above except for the following” superimpose the extracted information from the digitized second data onto the digital image corresponding to the first data to produce a combined image”. Wainer et al. teaches that limitation in column 4, lines 42-47.

As to claim 23, Wainer et al teaches the system of claim 22, wherein a determination of a biopsy location is made on the basis of the combined image (the output of detector 22 is processed by a signal processor 26, processor 26 determines location and energy of photons striking detector 22 and the output of signal processor 26 is further processed by image processor 27 to provide image data using a memory 28.the processed image are shown on display 29, column 9, lines 1-6).

As to claim 24, Wainer et al teaches the system of claim 21, wherein the first data obtained by the first device includes data about a physiology of the body part (the STET image shows the functional activity of the body tissue, not its structural detail, column 2, lines 1-2).

As to claim 25, Wainer et al teaches the system of claim 21, wherein the second data obtained by the second device includes anatomical data about the body part (SPTCT data in order to identify structure in the patient's body, column 2, lines 39-53).

As to claim 26, Wainer et al teaches the system of claim 21, further comprising: a monitor coupled to the second device and configured to display the image corresponding to the second data (display 29); and a localization device (position sensor 31) coupled to the second device and configured to enable selection of a preferred subset of the second data based on the digital image corresponding to the first data (position sensor, column 9, lines 7-20, note that the images are transformed into multisliced image where the correlation happened between the STET images and the CT images)).

As to claim 27, Wainer et al teaches the system of claim 26, wherein the localization device comprises a computer mouse (note that STET image is under control through the computer therefore it is clear that the location can be pointed by a computer mouse, column 9, lines 20-23).

As to claim 28, Wainer et al teaches the system of claim 21, wherein the system is configured to use a predetermined spatial coordinate system, and wherein the

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computer includes a transformer configured to transform at least one of the first data and the digitized second data into the predetermined spatial coordinate system (spatial parameter matching, column 8, lines 10-16, note that the operator can cooperatively choose the appropriate slices based on her understanding of the images and her knowledge of human anatomy, column 6, lines 62-64).

As to claim 29, Wainer et al teaches the system of claim 21, wherein the second device comprises one of the group consisting of a digital x-ray machine, an x-ray mammography machine, an x-ray cranial axial tomography machine, a magnetic resonance imaging machine, and an ultrasound machine (column 2, lines 39-42).

As to claim 30, Wainer et al teaches the system of claim 21, wherein the first device comprises a positron emission tomography scanner machine (column 1, lines 38-40).

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy Bitar whose telephone number is 571-270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nancy Bitar

5/25/2007



JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER